

WHAT IS CLAIMED IS:

1. An isolated nucleic acid encoding a TSG101 protein, or fragment of at least about 100 nt in length thereof, as other than an intact chromosome.
- 5 3. An isolated nucleic acid according to Claim 1, wherein said TSG101 protein is a mammalian protein.
4. An isolated nucleic acid according to Claim 3, wherein said nucleic acid is a cDNA.
- 10 5. An isolated nucleic acid according to Claim 3, wherein said TSG101 protein is mouse.
6. An isolated nucleic acid according to Claim 3, wherein said  
15 TSG101 protein is human.
7. An isolated nucleic acid according to Claim 6, wherein said sequence comprises an oncogenic mutation.
- 20 8. An isolated nucleic acid according to Claim 7, wherein said oncogenic mutation disrupts the coiled coil domain.
9. An expression cassette comprising a transcriptional initiation region functional in an expression host, a nucleic acid having a sequence of  
25 the isolated nucleic acid according to Claim 1 under the transcriptional regulation of said transcriptional initiation region, and a transcriptional termination region functional in said expression host.

10. A cell comprising an expression cassette according to Claim 9 as part of an extrachromosomal element or integrated into the genome of a host cell as a result of introduction of said expression cassette into said host cell and the cellular progeny of said host cell.

5

11. A method for producing TSG101 protein, said method comprising:  
growing a cell according to Claim 10, whereby said TSG101 protein is expressed; and  
isolating said TSG101 protein free of other proteins.

10

12. A purified polypeptide composition comprising at least 50 weight % of the protein present as a TSG101 protein or a fragment thereof.

13. A purified polypeptide composition according to Claim 12,  
15 wherein said *TSG101* protein is a mammalian protein.

14. A purified polypeptide composition according to Claim 13, wherein said TSG101 protein is human.

20 15. A purified polypeptide composition according to Claim 13, wherein said TSG101 protein is mouse.

16. A monoclonal antibody binding specifically to a TSG101 protein.

25 17. A method for characterizing the phenotype of a tumor, the method comprising:  
detecting the presence of an oncogenic mutation in *TSG101* in said tumor,

wherein the presence of said oncogenic mutation indicates that said tumor has a *TSG101*-associated phenotype.

18. An method according to Claim 17, wherein said oncogenic  
5 mutation disrupts the coiled coil domain.

19. A method according to Claim 18, wherein said tumor is a carcinoma.

10 20. A method according to Claim 19, wherein said carcinoma is a breast carcinoma.

21. A method according to Claim 17, wherein said detecting step comprises analyzing the DNA of said tumor.

15

22. A method according to Claim 17, wherein said detecting step comprises functional analysis of *TSG101* protein function.

23. A method according to Claim 17, wherein said detecting step  
20 comprises detecting antibody binding to abnormal *TSG101* protein.